

**FY 2018 Traditional Section 6 Grant Program
PRIORITY LIST OF PROJECT TOPICS
{Federal conservation status listed; if none then NatureServe or IUCN ranks appear}**

PLANTS

- **Population Status Assessments for Listed Plants at Big Bend National Park:** Chisos Mountain hedgehog cactus (*Echinocereus chisoensis* var. *chisoensis*), **THREATENED**; Bunched cory-cactus (*Coryphantha ramillosa* ssp. *Ramillosa*), **THREATENED**; Lloyd's mariposa cactus (*Echinomastus mariposensis*), **THREATENED**; and Guadalupe fescue (*Festuca ligulata*), **ENDANGERED**. Project must use statistically robust range-wide sampling methods and analyses to estimate global population sizes, and must establish repeatable methods and criteria so that population trends may be assessed over long term. This project will contribute new data on the characteristics of occupied sites to improve modelling of potential habitats and estimation of the species' global range and total population size.
- **Shinner's sunflower (*Helianthus occidentalis* ssp. *Plantagineus*) – PETITIONED:** Proposals should be geared towards conducting extensive, methodical surveys of extant and previously undetected populations to document population trends and expansions. Survey results should be mapped and will be consistent with methods in previous survey efforts. This project will contribute new data on the status and trends of the species' geographic range, and will inform the Species Status Assessment process and the Service's review under Section 4 of the ESA by FY2019.
- **Texas trailing phlox (*Phlox nivalis* ssp. *texensis*) - ENDANGERED:** Investigate the level of extant genetic diversity within the species and among populations by using the most current and scientifically-sound techniques. This project will inform the species' current recovery criterion and assist in future recovery.

INVERTEBRATES

Texas Freshwater Mussels:

- **Texas hornshell (*Popenaias popeii*) PROPOSED ENDANGERED G1S1**
 - Proposals to evaluate water quality (temperature, dissolved oxygen, etc...) tolerance limits, water quality models, and hydraulic habitat requirements throughout its known range, and for the species known host fishes.

For any of the following species listed below, need following research:

- Proposals to evaluate the status and distribution of threatened mussel species in the upper Brazos (upstream of the city of Waco), upper Colorado Rivers, Wichita River basin and other Red River tributaries.
- Assessment of threats to known populations such as: habitat alterations, low flow water quality requirements, loss of river connectivity due to barriers, and environmental contaminants.
- Evaluation of habitat availability, and estimates of population size and population dynamics

Texas heelsplitter (*Potamilus amphichaenus*) PETITIONED
Triangle pigtoe (*Fusconaia lananensi*) G1S1; CRITICALLY IMPERILED
Louisiana pigtoe (*Pleurobema riddelli*) G1S1; CRITICALLY IMPERILED

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Texas fawnsfoot (*Truncilla macrodon*) PETITIONED
Mexican fawnsfoot (*Truncilla cognate*) PETITIONED
Falsespike, (*Fusconia* [*Quadrula*] *mittelli*) PETITIONED
Salina mucket (*Potamilus metnecktyai*) PETITIONED
Texas pimpleback (*Quadrula petrina*) PETITIONED
Texas fatmucket (*Lampsilis bracteata*) PETITIONED

Arthropods

- **Kisatchie Painted Crayfish SGCN G2S2:** Research on the species biology, range, habitat utilization/association, population structure and dynamics, and population genetics. We strongly recommend including other co-occurring crayfish species (especially SGCN species) to create a crayfish community assessment.
- **Texas Emerald Dragonfly (*Somatochlora margarita*) PETITIONED/UNDER REVIEW:** Assess and define larval habitat use and requirements.
- **Frosted elfin butterfly:** Proposals should address providing a state status assessment for frosted elfin butterfly (USFWS discretionary status review decision: FY23).
- **Louisiana eyed silkmoth:** Surveys for Automeris Louisiana silkmoth
- **Assessment and Revision of Karst Fauna Regions for karst invertebrates in Travis and Williamson Counties, Texas:** Based on current karst invertebrate distributions, geological, hydrological, and other data, assess the need for revisions to the configuration of Karst Fauna Regions in Travis and Williamson Counties, Texas. If analyses warrant, revise and remap boundaries of Karst Fauna Regions to inform recovery of listed karst invertebrates.
- **Comal Springs dryopid beetle (*Stygoparnus comalensis*) ENDANGERED:** Proposals on the life history, habitat associations, and trophic ecology.

FISH

- **Chihuahua Catfish PETITIONED/REVIEW SGCN G1G2S1** Research on the species biology, range, habitat utilization/association, population structure and dynamics, and population genetics. (Looking for individual population genetic surveys and traditional survey methods to collect voucher specimens and other information - not presence/absence information from eDNA surveys).
- **Leon Springs Pupfish ENDANGERED:** Population genetic structure for wild and captive populations. Genetic assessment should be used to develop a species genetic management and stocking plan to inform management decisions.
- **Pecos Gambusia ENDANGERED:** Habitat associations, habitat partitioning, and habitat competitive interactions of Pecos Gambusia and Largespring Gambusia. Rangewide (TX and NM) population genetic assessment of Pecos Gambusia.
- **Pecos Pupfish PETITIONED/REVIEW SGCN G1S1:** Rangewide (TX and NM) population genetic structure (including refuge populations) of Pecos Pupfish to guide the creation of a Conservation and Genetic Management Plan.

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- Geographic and ecological correlates of spawning, recruitment, growth rates, stable isotope/diets, and adult survival of populations across the species range.
- **Big Bend Gambusia ENDANGERED:** Population structure and dynamics of the refuge populations. Current population genetic structure assessment.
- **Dwarf Seahorse (*Hippocampus zosterae*) – CANDIDATE:** Distribution and abundance surveys of Dwarf Seahorse along the Texas Coast.

Imperiled Great Plains Fishes: for any of the following species listed below, need following research:

- Development of production facilities to aid in research and repatriation efforts
- Assessment of habitat fragmentation including physical and hydrologic barriers to movement; develop plans to eliminate or mitigate barriers
- Development of drought management plans including assessments of refugia during droughts, criteria for instream and off site refugia and hatcheries, genetics mgt., etc.
- Assessment of impacts of off-road vehicle use in Canadian and Red River basins
- Assessment of distribution and effects of *Phragmites* in the Canadian River upstream of Lake Meredith; implement treatment
- Assessment of migration and drift requirements of Great Plains broadcast spawning cyprinids
- Development of repatriation plans and strategies for imperiled fishes of the Great Plains
- Assessment of effects of invasive Sheepshead Minnow and Gulf Killifish in the Brazos and Red river basins including: identifying sources/causes of invasion; develop of mitigation strategies/management plans and implementation strategies in priority areas

Fishes included, but not limited to:

Red River Pupfish (*Cyprinodon rubrofluviatilis*) SGCN G5S4 NOT LISTED

Plains Minnow (*Hybognathus placitus*) SGCN G4S4

Peppered Chub (*Macrohybopsis tetranema*) SGCN G1S1

Prairie Chub (*M. australis*) SGCN G3

Silver Chub (*M. storeriana*) SGCN G5

Red River Shiner (*Notropis bairdi*) SGCN G4S3 NOT LISTED

Smalleye Shiner (*N. buccula*) ENDANGERED

Arkansas River Shiner (*N. girardi*) THREATENED

Sharpnose Shiner (*N. oxyrhynchus*) ENDANGERED

Chub Shiner (*N. potteri*) SGCN G4S4 NOT LISTED

HERPS

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- **Desert massasauga PETITIONED:** More genetics work to compliment Section 6 study funded through NM
- **Concho watersnake DELISTED:** Conduct post-delisting monitoring efforts across the species range.
- ~~**Dunes sagebrush lizard SGCN G2G3S1:** Further population monitoring and assessment of habitat disturbance on populations of DSL. REMOVED 28 Sept 2017 due to change in priorities.~~

BIRDS

- **Whooping Crane (*Grus americana*) ENDANGERED:** managing in-stream flows for improved estuarine health and wintering WHCR habitat: Key research questions include identifying freshwater sources and finding ways to ensure freshwater, nutrients, and sediments are delivered to these coastal estuaries. Research should investigate cost/benefits of various water-delivery options.
- **Piping Plover (*Charadrius melodus*) THREATENED; and Red Knot (*Calidris canutus*) THREATENED:** comparison of effects of various beach maintenance programs, beach nourishment, and human activities on shorebird use of beach habitat (measured by birds' abundance, distribution, and prey availability). Develop management recommendations for land managers.
- **Red-crowned Parrot (*Amazona viridigenalis*) CANDIDATE:**
 - Development of monitoring plans for this species and initial implementation of this monitoring in key areas of habitat in Tamaulipas.
 - Outreach to local landowners and communities in areas where the parrots occur regarding conservation of the parrots and their habitat.
- **Golden-cheeked Warbler (*Setophaga chrysoparia*) ENDANGERED:**
 - Using GIS techniques evaluate landuse or vegetative cover changes over time across all or important portions of winter range.
 - Winter home range delineation using GIS and ground verification.
 - Evaluate the potential and feasibility for conservation and protection of winter range sites critical to overwintering GCWA on lands under formal protection (private reserves, state and community properties, etc.).
 - Reforestation of critical winter sites, perhaps on pilot study basis for feasibility and logistical refinement on country by country basis.